



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Number : 09/824,053 Confirmation No.: 9289  
Applicant : Peter Stougaard, *et al.*  
Filed : April 3, 2001  
Title : RECOMBINANT HEXOSE OXIDASE: A METHOD OF  
PRODUCING SAME AND USE OF SUCH ENZYME  
TC/Art Unit : 1652  
Examiner: : William W. Moore  
  
Docket No. : 54320.000008  
Customer No. : 21967

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Sir:

In accordance with 37 C.F.R. §§ 1.97 and 1.98, and in compliance with the duty of disclosure set forth in 37 C.F.R. § 1.56, applicants are submitting herewith copies of references 1-5, 11-14, 17, 19-32, 36, 37, 44-94 as listed on the attached Form PTO-1449 for consideration and to be made of record herein by the U.S. Patent and Trademark Office in the above-captioned application. The attached Form PTO-1449 was previously submitted with the Information Disclosure Statement filed on November 4, 2002. As requested by the Examiner this Supplemental Information Disclosure Statement submission provides the documents that were omitted from that earlier submission because they were cited in a prior application to which the present application claims priority.

Consideration of the foregoing plus the prompt return of a copy of the enclosed Form PTO-1449 with the Examiner's initials in the left column in accordance with MPEP 609 are respectfully requested.

In accordance with 37 C.F.R. § 1.97(b), the Information Disclosure Statement filed on November 4, 2002 citing the above-identified references was submitted prior to issuance of a first Office Action. Therefore, it is respectfully submitted that no fee is required for

consideration of this information. However, in the event any fee is deemed necessary, the Commissioner is authorized to charge the undersigned's Deposit Account No. 50-0206.

In the event any variance exists between the amount enclosed and the Patent Office charges, please charge or credit any difference to the undersigned's Deposit Account No. 50-0206.

Respectfully submitted,

HUNTON & WILLIAMS LLP

Dated: February 26, 2004

By: Scott Farnell  
Stanislaus Aksman  
Registration No. 28,562  
Scott F. Yarnell  
Registration No. 45,245

Hunton & Williams LLP  
Intellectual Property Department  
1900 K Street, N.W.  
Suite 1200  
Washington, DC 20006  
(202) 955-1500 (telephone)  
(202) 778-2201 (facsimile)  
SFY/dkt


PTO-1449  
(REV. 7-80)

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.:  
54320.000008

SERIAL NO.:  
09/824,053

## LIST OF MATERIALS CITED BY APPLICANT

INVENTOR'S NAME:  
Peter STOUGAARD et al.

EXAMINER:  
Unassigned

FILING DATE:  
April 3, 2001

GROUP:  
1646

(Use several sheets if necessary)

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	1. 2 7 8 3 1 5 0	02/26/57	Luther			
	2. 5 4 5 1 4 1 3	09/19/95	Fok et al.			
	3. 5 0 9 4 9 5 1	03/10/92	Rosenberg			
	4. 5 1 0 8 7 6 5	04/28/92	Maat et al.			
	5. 3 5 2 0 7 0 2	07/14/70	Menzi			
	6. 5 6 5 0 1 8 8	07/22/97	Gaubert et al.			
	7. 5 0 5 9 4 3 0	10/22/91	Bowles			
	8. 5 9 1 6 6 0 7	06/29/99	Mutsaers et al.			
	9. 5 3 1 8 7 8 5	06/07/94	DeStefanis			
	9A 6 2 5 1 6 2 6	06/26/01	Stougaard et al.			
	10. 6 3 5 8 5 4 3	03/19/02	Søe et al.			

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
					YES NO
11. 2,012,723	09/90	Canada			
12. JPA92084848	03/92	Japanese Patent Abstract			
13. B1-321-811	06/89	European Patent Specification			
14. B1-338-452	10/89	European Patent Specification			
15. Patent 39,483	Apparent filing date 9/12/94	CHILE			
16. JP73016612	12/70	JAPAN and GREAT BRITAIN Abstract			
17. JP73016612 ** (Japanese Unexamined Patent Publication No. 48-16612)	12/70	JAPAN Full English Translation			

EXAMINER

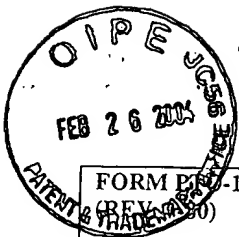
DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

\*\*NOTE: This reference was inadvertently identified as JP7301661 in the Supplemental IDS of April 26, 2001 in the prior application. Nonetheless, it is clear from the context of that IDS that it was in fact JP73016612. The English translation filed was that of JP73016612.



10-1449 (REV. 7-80)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO.: 54320.000008		SERIAL NO.: 09/824,053		
LIST OF MATERIALS CITED BY APPLICANT  (Use several sheets if necessary)				INVENTOR'S NAME: Peter STOUGAARD et al.		EXAMINER: Unassigned		
				FILING DATE: April 3, 2001		GROUP: 1646		
FOREIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION	
							YES	NO
	18.	4301904A1	2/94	GERMANY English Abstract & English translation of claims				
	19.	EP 0396 162	1/7/1993	EUROPE				
	20.	Abstract, JP 1994000010444	10/25/94	JAPAN				
	21.	Abstract, JP 07274807 A	10/24/95	JAPAN				
	22.	Abstract, JP 07-274807	10/24/95	JAPAN				
	23.	Abstract, JP 04207146A	7/29/99	JAPAN				
	24.	Abstract, JP 04207145	7/29/99	JAPAN				
	25.	Abstract, JP 03164127	07/16/99	JAPAN				
	26.	Abstract, JP 61085158	04/30/86	JAPAN				
	27.	WO 95129996	11/09/95	EUROPE				
	28.	EP A 0468731	07/22/91	EUROPE				
	29.	DE A 1050703	03/26/56	GERMANY				
	30.	Abstract, JP A 6296467	1994	JAPAN				
	31.	WOA-9501727	01/19/95	EUROPE				
	32.	0 682 116	11/15/95	EUROPE				
	33.	Patent Application No. 1363-1995	08/07/96	CHILE				
	34.	Patent Application No. 1376-1992	09/20/93	CHILE				
	35.	Patent Application No. 1595-1994	04/01/96	CHILE				
	36.	Patent Application No. 858-1991	03/10/92	CHILE				
	37.	Patent Application No. 875-1994	05/08/96	CHILE				
EXAMINER			DATE CONSIDERED					
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.								



FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.:  
54320.000008SERIAL NO.:  
09/824,053INVENTOR'S NAME:  
Peter STOUGAARD et al.EXAMINER:  
Unassigned

## LIST OF MATERIALS CITED BY APPLICANT

(Use several sheets if necessary)

FILING DATE:  
April 3, 2001GROUP:  
1646

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION	
							YES	NO
	38.	Patent Application No. 2,224,143	12/12/96	CANADA				
	39.	Patent Application No. 875-95	Apparent filing date 06/16/95	CHILE				
	40.	Patent Application No. 1363-95	Apparent filing date 09/07/94	CHILE				
	41.	Patent Application No. 2,157,718	03/08/96	CANADA				
	42.	Patent Application No. 2,134,597	04/30/95	CANADA				
	43.	Patent Application No. 2,151,978	12/18/95	CANADA				

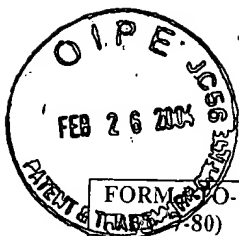
## OTHER MATERIALS (Including Author, Title, Date, Pertinent Pages, Etc.)

	44.	Bean and Hassid, 1956, <i>J. Biol. Chem.</i> , 218:425-436
	45.	Ikawa, 1982, <i>Methods Enzymol.</i> , 89:145-149
	46.	Sullivan et al., 1973, <i>Biochemica et Biophysica Acta</i> , 309:11-22
	47.	Rand, 1972, <i>Journal of Food Science</i> , 37:698-701
	48.	Bak et al., "A Method for Testing the Strengthening Effect of Oxidative Enzymes in Dough", presented at a symposium entitled "Wheat Structure, Biochemistry and Functionality", Reading UK, 10-12 April 1995
	49.	Christiansen, 1993, "Application of Oxidoreductases for Food Preservation" in Progress Report of R&D Projects and Concerted Actions published by the European Communities, Luxembourg, 1993, p. 32-36
	50.	Kerschensteiner, The Mechanism of Action and the State of Copper in Hexose oxidase, Thesis, 1978, p. iii-xiii
	51.	Perella, F.W., <i>Analytical Biochemistry</i> , 174:437-447 (1988)
	52.	AACC Method 36-01A
	53.	"Enzyme Technology in Flour Milling and Baking", <i>Baking Industry Europe</i> (Alan Gordon, editor), S. Haarasilta and T. Pullinen (1993), pp. 49-52
	54.	"Enzyme Nomenclature 1984 (Recommendations of the Nomenclature Committee of the International Union of Biochemistry on the Nomenclature and Classification of Enzyme-Catalysed Reactions)" (1984), pages v, ix, and 50-51
	55.	"Glucose Oxidase: Production, Properties, Present and Potential Applications", <i>Soc. Chem. Ind. (London)</i> , (1961), L.A. Underkofler, p. 72-86
	56.	"Methods in Enzymology", <i>Biomass Part B Glucose Oxidase of Phanerochaete chrysosporium</i> , R.L. Kelley and C.A. Reddy (1988), 161, pp. 306-317

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449  
(Rev. 7-80)U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.:

54320.000008

SERIAL NO.:

09/824,053

INVENTOR'S NAME:

Peter STOUGAARD et al.

EXAMINER:

Unassigned

FILING DATE:

April 3, 2001

GROUP:

1646

## LIST OF MATERIALS CITED BY APPLICANT

(Use several sheets if necessary)

## OTHER MATERIALS (Including Author, Title, Date, Pertinent Pages, Etc.)

- |     |  |
|-----|--|
| 57. | Definition of "hexose", Webster Dictionary, p. 1065  |
| 58. | "Baking Science & Technology", E.J. Pyler (1982), vol. 1, pp. 314-316  |
| 59. | "Novel Enzyme Combinations A New Tool to Improve Baking Results", <i>Agro-Industry Hi-Tech</i> , S. Haarasilta and T. Pullinen, (May/June 1992), p. 12-13  |
| 60. | "Enzyme Nomenclature (Recommendations of the Nomenclature Committee of the International Union of Biochemistry and Molecular Biology on the Nomenclature and Classification of Enzymes)" (1992), page 56                                 |
| 61. | "Enzyme Function", Experimental Report from Novo Nordisk, 3/13/97, 2 pages   |
| 62. | <i>J. Chromatog.</i> , Knoll et al., 55 (1971), 425-428  |
| 63. | "DEEO <sup>®</sup> " A glucose oxidase and catalase enzyme system product sheet from Miles laboratories- Enzymes from Miles (technical Information) (1976), 5 pages  |
| 64. | "Enzymes in Food Processing", 2 <sup>nd</sup> Ed. by G. Reed, Universal Foods Corporation, Academic Press (1975), p. 222-229   |
| 65. | "Properties and Applications of the Fungal Enzyme Glucose Oxidase", reprinted from "Proceedings of the International Symposium on Enzyme Chemistry", Tokyo and Kyoto, (1957) L.A. Underkofler, (1958), pp. 486-490                       |
| 66. | "The Oxidation of Glucose and Related Compounds by Glucose Oxidase from <i>Aspergillus Niger</i> ", <i>Biochemistry</i> , Pazur et al., Vol. 3(4), 1964, 578-583   |
| 67. | "Technology of Cereals (with special reference to wheat)", 2 <sup>nd</sup> Ed., Pergamom Press Ltd. N. L. Kent, (1975), pp. iv-v, 48-49, and 72-73   |
| 68. | "Gluzyme <sup>™</sup> " product sheet from Novo Nordisk Enzyme Process Division, January 1994, 2 pages   |
| 69. | Derwent Publications Ltd., London, GB; class D13, AN 73-30288u XP002012361 & JP, A48016612 (EISAI CO. LTD.)  |
| 70. | Clare et al., 1991, <i>Bio/Technology</i> 9:455-460 [3]  |
| 71. | Cregg et al., 1987, In: <i>Biological Research on Industrial Yeast</i> , Vol. II, Stewart, G.G. et al. (Eds.), pp. 1-18 [4]  |
| 72. | Fernandez et al., 1992, <i>Analytical Biochemistry</i> , 201:255-264 [5]   |
| 73. | Pedersen et al., 1996, <i>J. Biol. Chem.</i> 271:2514-2522 [10]  |
| 74. | Sahm et al., 1973, <i>Eur. J. Biochem.</i> 37:250-256 [12]   |
| 75. | Tschopp et al., 1987, <i>Bio/Technology</i> 5:1305-1308 [17]   |
| 76. | Barkholt, V. and A.L. Jensen, 1989, Amino Acid Analysis: Determination of Cysteine plus Half-Cysteine in Proteins after Hydrochloric Acid Hydrolysis with a Disulfide Compound as Additive, <i>Analytical Biochemistry</i> , 177:318-322 |
| 77. | Fernandez, J. et al., 1994, An Improved Procedure for Enzymatic Digestion of Polyvinylidene Difluoride-Bound Proteins for Internal Sequence Analysis, <i>Analytical Biochemistry</i> , 218:112-117                                       |
| 78. | Groppe, J.C. and Morse, D.E., 1993, Isolation of full-length RNA templates for reverse transcription from tissues rich in RNase and proteoglycans, <i>Anal. Biochem.</i> , 210:337-343   |
| 79. | Kerschensteiner, D.A. and Klippenstein, D.A., 1978, Purification Mechanism and State of Copper in Hexose Oxidase, <i>Federation Proceedings</i> 37:1816 abstract   |

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449  
(Rev. 7-80)U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.:  
54320.000008SERIAL NO.:  
09/824.053

## LIST OF MATERIALS CITED BY APPLICANT

INVENTOR'S NAME:  
Peter STOUGAARD et al.EXAMINER:  
UnassignedFILING DATE:  
April 3, 2001GROUP:  
1646

(Use several sheets if necessary)

## OTHER MATERIALS (Including Author, Title, Date, Pertinent Pages, Etc.)

- |     |   |
|-----|---|
| 80. | Laemmli, U.K., 1970, Cleavage of structural Proteins during the Assembly of the Head of Bacteriophage T4, <i>Nature</i> (London), 227:680-685   |
| 81. | Schägger, H. and von Jagow, G., 1987, Tricine-Sodium Dodecyl Sulfate-Polyacrylamide Gel Electrophoresis for the Separation of Proteins in the Range from 1 to 100 kDa, <i>Analytical Biochemistry</i> 166:368-379 |
| 82. | Sock, Jr. and Rohringer, R., 1988, Activity Staining of Blotted Enzymes by Reaction Coupling with Transfer Membrane-Immobilized Auxiliary Enzymes, <i>Analytical Biochemistry</i> 171:310-319                     |
| 83. | Yeh, K-W, Juang, R.H. and Su, J-C, A Rapid and efficient method for RNA isolation from plants with high carbohydrate content, <i>Focus</i> 13 (3):102-103, 1991   |
| 84. | Maes et al., <i>Analytica Chimica Acta</i> , 284 (1993) 281-290   |
| 85. | Sambrook, J., Fritsch, E.F. and Maniatis, T., 1989, <i>Molecular Cloning, A Laboratory Manual 2<sup>nd</sup> Ed.</i> Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY                                  |
| 86. | PCT International Search Report for PCT/DK96/00238, issued 04/11/96   |
| 87. | International Search Report from the International Searching Authority in PCT/DK96/00239 issued 9/11/96   |
| 88. | The Examiner's Report on Application for Patent of Invention (Chilean Application No. 939-96) and English translation thereof   |
| 89. | Dowling et al., "Hexose Oxidation by an enzyme system of <i>Malleomyces Pseudomallei</i> ", <i>Journal of Bacteriology</i> (1956) 72: 555-560   |
| 90. | Bean et al., "Carbohydrate Metabolism of Citrus Fruits", <i>Journal of Biological Chemistry</i> (1961) 236: 1235-1240   |
| 91. | Witteveen, C.F.B.: Thesis "Gluconate formation and polyol metabolism in <i>Aspergillus niger</i> ", selected pages (1993)   |
| 92. | AACC Method 54-10   |
| 93. | Ellman, George L.: "A Colorimetric Method for Determining Low Concentrations of Mercaptans", <i>Archives of Biochemistry and Biophysics</i> (1958) 74: 443-450  |
| 94. | U.S. Patent Application Serial No. 09/932,923 filed August 21, 2001   |

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.